


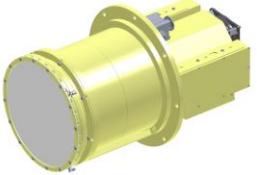



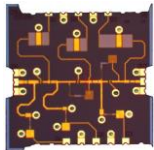
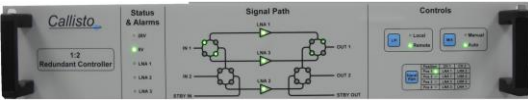


Cryogenic LNA Frequency and NT Performance Summary Table

Product Category	Frequency Bands	Noise Temperatures	Gain	Input Configurations	Cooling System
ULTRA 	S-Band [2.2 – 2.3] GHz X-Band [8.4 – 8.5] GHz Ka-Band [25.5 – 27.0] GHz Ka-Band [31.8 – 32.3] GHz	10K 11K 28K 30K	> 55dB	Waveguide Input: Single, Dual or Tri-Band	GM 15K
ULTRA-WIDEBAND 	[2.3 – 14.0]* GHz S, C, X and Ku Bands <i>* The frequency band can be adapted to customer's needs</i>	< 20K	> 55dB	Integrated Feed: QRFH (VLBI - Radio Astronomy)	GM 15K
COMPACT 	X-Band [7.25 – 8.50] GHz K-Band [18.2 – 21.2] GHz Ka-Band [25.5 – 27.0] GHz	< 20K 35K 35K	> 50dB	Waveguide Input: Single or Dual Channel	Stirling 80K
COMPACT-WIDEBAND 	[2.3 – 14.0]* GHz S, C, X and Ku Bands <i>* The frequency band can be adapted to customer's needs</i>	< 40K	> 55dB	Integrated Feed Horn: QRFH (VLBI - Radio Astronomy)	Stirling 80K

Ambient LNA Frequency and NT Performance Summary Table

Product category	Frequency bands	Noise performance	Gain
K-BAND 20GHZ WAVEGUIDE LNA 	K-Band [18.2 – 21.2] GHz	1.65dB NF max (1.5dB mean) 135K NT max (120K mean)	48dB min
KA-BAND 26GHZ WAVEGUIDE LNA 	Ka-Band [25.5 – 27.0] GHz	1.83dB NF max (1.7dB Typical) 155K NT max (140K Typical)	43dB min
WIDEBAND COAXIAL LNA 	Wideband [12 – 32] GHz	2.2dB NF max [19 – 28] GHz 3.0dB NF max [12 – 32] GHz	25dB min
MMIC CIRCUIT 	K-Band [18.2 – 21.2] GHz	1.3dB NF max	29dB min
LNA REDUNDANCY CONTROLLER SYSTEM 	All LNA band (S, X, K, Ka)	Callisto is able to offer a solution for controlling RF switching of LNAs for redundancy. The basic controller unit is a 19" rack mountable unit which contains power supplies and control circuits for 2 or 3 LNAs together with the RF switches. The design is modular and can be configured for the customer's requirements	